

(2)

DTIC FILE COPY

AD-A201 944

"A Conversation at the Club"

Another Analysis of the Concept of Center of Gravity

by

Lieutenant Colonel Charles R. Viale, Infantry

School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas

February 1988

DTIC
ELECTE
DEC 29 1988
S D
CD

DISTRIBUTION STATEMENT A

Approved for public release
Distribution Unlimited

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED		1b. RESTRICTIVE MARKINGS	
2a. SECURITY CLASSIFICATION AUTHORITY		3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution unlimited	
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE			
4. PERFORMING ORGANIZATION REPORT NUMBER(S)		5. MONITORING ORGANIZATION REPORT NUMBER(S)	
6a. NAME OF PERFORMING ORGANIZATION School of Advanced Military Studies, USAC&GSC	6b. OFFICE SYMBOL (If applicable) ATZL-SWV	7a. NAME OF MONITORING ORGANIZATION	
6c. ADDRESS (City, State, and ZIP Code) Fort Leavenworth, Kansas 66027-6900		7b. ADDRESS (City, State, and ZIP Code)	
8a. NAME OF FUNDING/SPONSORING ORGANIZATION	8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8c. ADDRESS (City, State, and ZIP Code)		10. SOURCE OF FUNDING NUMBERS	
		PROGRAM ELEMENT NO.	PROJECT NO.
		TASK NO.	WORK UNIT ACCESSION NO.
11. TITLE (Include Security Classification) A Conversation at the Club Another Analysis of the Concept of Center of Gravity (U)			
12. PERSONAL AUTHOR(S) Lieutenant Colonel Charles R. Viale			
13a. TYPE OF REPORT Monograph	13b. TIME COVERED FROM _____ TO _____	14. DATE OF REPORT (Year, Month, Day) 88/02/10	15. PAGE COUNT 27
16. SUPPLEMENTARY NOTATION			
17. COSATI CODES		18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	SUB-GROUP	
19. ABSTRACT (Continue on reverse if necessary and identify by block number) This paper presents the author's views regarding the center of gravity, a concept which has created a surprising amount of disagreement among people studying operational art. The problem seem to stem from differences in interpretation of Carl von Clausewitz, from whose work the term "center of gravity" is derived. The principal point of contention is whether or not the term should be limited in application to military forces themselves, that is, to a concentration or mass of the enemy force, or whether it should be expanded to apply to a broad range of factors which affect war. Those who advocate an almost literal translation of Clausewitz's original word, <i>schwerpunkt</i> , argue that belligerents should seek a vital concentration of their enemy's armed forces and destroy it. The destruction of a major element of the enemy's combat power, they contend will casue him to be unable to recover. He will have been unbalanced by the successful attack of his center of gravity.			
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS		21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED	
22a. NAME OF RESPONSIBLE INDIVIDUAL LTC Charles R. Viale		22b. TELEPHONE (Include Area Code) (913) 684-3437	22c. OFFICE SYMBOL ATZL-SWV

Item 19 cont.

The U.S. Army's operations manual, FM 100-5, expands the concept of center of gravity beyond that encompassed by only the enemy forces. The manual states that at the operational and strategic levels of war, there are certain vital factors which can be attacked or manipulated in order to unhinge the enemy's effort, or at least to cause him to fight at a marked disadvantage. These vital factors, which are called centers of gravity, give balance and continuity to armed forces. The concept provides a planning tool whereby one looks at war as more than a simple clash of armies in the field, where the greater application of force is always decisive.

Whichever way one interprets center of gravity, there is seldom dispute concerning its role in warfare. The determination of the enemy center of gravity and its effective attack are the essence of operational art, and represent the future of strategic planners.

"A Conversation at the Club" portrays a group of Army officers and their discussion of center of gravity. Each of the two ways of interpreting the concept are championed, and the reader may judge not only how fairly they are represented, but which, if either is most appropriate.

"A Conversation at the Club"

Another Analysis of the Concept of Center of Gravity

by

Lieutenant Colonel Charles R. Viale, Infantry

**School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas**

February 1988

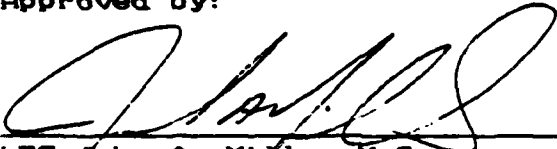
**APPROVED FOR PUBLIC RELEASE:
DISTRIBUTION UNLIMITED.**

School of Advanced Military Studies
Monograph Approval

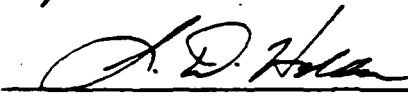
Name of Student: LTC Charles R. Viale

Title of Monograph: A Conversation at the Club

Approved by:


LTC John A. Mills, M.S.

Director, Advanced Operational
Studies Fellowship


COL L. D. Holder, M.A.

Director, School of Advanced
Military Studies


Philip J. Brookes, Ph.D.

Director, Graduate Degree
Program

Accepted this 7th day of March, 1988

Accession For	
NTIS - GRAFI	✓
DTIC TAB	
Unannounced	
Justification	
By	
Dist	
A-1	



ABSTRACT

A CONVERSATION AT THE CLUB. Another Analysis of the Concept of Center of Gravity, by LTC Charles R. Viale, Infantry, United States Army.

This paper presents the author's views regarding the center of gravity, a concept which has created a surprising amount of disagreement among people studying operational art. The problem seems to stem from differences in interpretation of Carl von Clausewitz, from whose work the term "center of gravity" is derived. The principal point of contention is whether or not the term should be limited in application to military forces themselves, that is, to a concentration or mass of the enemy force, or whether it should be expanded to apply to a broad range of factors which affect war.

Those who advocate an almost literal translation of Clausewitz's original word, schwerpunkt, argue that belligerents should seek a vital concentration of their enemy's armed forces and destroy it. The destruction of a major element of the enemy's combat power, they contend, will cause him to be unable to recover. He will have been unbalanced by the successful attack of his center of gravity.

The U.S. Army's operations manual, FM 100-5, expands the concept of center of gravity beyond that encompassed by only the enemy forces. The manual states that at the operational and strategic levels of war, there are certain vital factors which can be attacked or manipulated in order to unhinge the enemy's effort, or at least to cause him to fight at a marked disadvantage. These vital factors, which are called centers of gravity, give balance and continuity to armed forces. The concept provides a planning tool whereby one looks at war as more than a simple clash of armies in the field, where the greater application of force is always decisive.

Whichever way one interprets center of gravity, there is seldom dispute concerning its role in warfare. The determination of the enemy center of gravity and its effective attack are the essence of operational art, and represent the focus of strategic planners.

"A Conversation at the Club" portrays a group of Army officers and their discussion of center of gravity. Each of the two ways of interpreting the concept are championed, and the reader may judge not only how fairly they are represented, but which, if either, is most appropriate.

A Conversation at the Club

It was one of those lightning bolts that seem to explode from within the building itself, and I instinctively ducked between my shoulder blades. A glass bounced, then shattered on the kitchen floor, the sound slightly muffled by the double doors leading to the dining room. Feeling self-conscious about my startlement, I quickly glanced about the room. The dozen or so other diners were recovering from their own fright, and no one had yet uttered even an exclamation of shock. The lights dimmed to a brown glow, surged back to bright again, then abruptly went out.

I had finished my meal anyway, so I pushed back in my chair to let my eyes adjust to the dark. The other diners and the staff made nervous laughing noises, punctuated by a strong oath from beyond the room. A candle sputtered at the hostess' station. The night beyond the plate glass windows was drenched by slashing rain and sporadically illuminated by the lightning. As the staff located and lighted more candles, I slowly sipped my coffee, expecting the electricity to be restored just about the time the last candle sparked to life.

The day had proven unexpectedly productive, and I had been able to move my return flight ahead so that I could go home in the morning. My only plans for the evening were to walk back to my room after supper, spend a few hours reading, and get to sleep early. The heavy clouds that had blown in this morning had promised rain, but the severity of this evening's storm was a surprise. I did not relish the idea of walking in it. I had only my raincoat for protection, and I knew it wouldn't shield the bottoms of my trousers and my feet.

I paid my check and walked down the darkened hallway toward the club entrance. The headlights of a car swept past the glass doors, barely cutting their way through the almost solid wall of water that waited outside. Deciding to let the storm slacken before I attempted the walk home, I turned and went back down the hallway to the lounge.

The club lounge was warm and quiet. The orange flame of the large fireplace was accentuated by the dark, giving a richness and character to the room. Pipesmoke wafted faintly into the fireplace from a solitary smoker in the corner. I took a seat at the bar, ordered a brandy, and studied the reflection in the mirror. Heavy, wine-colored drapes framed the single large window directly opposite the bar, while the fireplace occupied the end of the room opposite the door. The walls were decorated with stately portraits of Army officers, dimly hirsute and corpulent in the flickering light. There were perhaps four other people, including the pipe smoker, in the lounge. My brandy was served and I sipped it pensively, enjoying the fire and the distant thunder.

Within moments the serenity was broken by a group of gentlemen who were talking loudly as they entered the room.

There were five of them, and they were all in uniform. They took seats at a table very close to where I was sitting at the bar, ordered drinks, and continued their conversation.

"I thought if I heard that Rew-park fellow, or whatever his name is, bring up the business of center of gravity one more time, I was going to slap him!" bellowed one of them.

"His name is Roubert, I believe," responded another, "and I'd have been grateful if he had kept his bizarre concepts of war to himself. He clearly has never read Clausewitz."

I strained to see in the mirror while a third member of the group, a lieutenant colonel with the insignia of the field artillery, replied, "I enjoyed Roubert's comments. Personally, I agree with what he said about centers of gravity and find the concept rather intriguing."

I slowly turned around on my barstool and leaned back against the bar, giving me a better look at the group. The last speaker, the artilleryman, wore a nametag identifying him as Clavis.

Colonel Bearos, who had been the one to threaten to slap Roubert, lighted a cigar. "You like this business of center of gravity, do you, Clavis?"

"Yes, sir. I do."

"There is certainly nothing wrong with the concept of center of gravity. It's the interpretation of it that must be done carefully." The speaker's nametag read Kitting, his rank was lieutenant colonel and his branch was air defense artillery. "There are too many people who insist on changing the concept as Clausewitz described it, and that is where I differ with the day's last speaker - that guy Rew-pert."

I realized that these officers had been in attendance at the large conference the post was hosting. Like me, they were apparently here temporarily and were probably waiting for the rain to subside.

An engineer colonel named South turned to Lieutenant Colonel Kitting and said, "The concept as Roubert explained it is in accord with FM 100-5, which describes center of gravity as the source of strength or balance of the enemy."

"That's true," said Colonel Bearos, "and that definition itself is derived from Clausewitz who stated that the objective in war is the destruction of the enemy armed forces in battle. He uses center of gravity to identify the most important part of the enemy force, that is the one that, if defeated, will cause the enemy's effort to collapse."

"It certainly makes sense to me to look at the enemy's armed forces," Colonel South responded. "If we destroy them the war is over. How can a country wage war without the means to do so?"

"Precisely," Colonel Bearos declared. "The defeat and destruction of the fighting forces of the enemy is the essence of operational art; it is the very purpose of our armed forces."

"The purpose of a country's armed forces," responded Colonel Clavis, "is to help achieve the political goals of the nation."

If this can be accomplished by coercion or deterrence, the military has done its job."

"Look, Clavis, I don't deny that there are ways other than direct combat to achieve political objectives," Colonel Bearos said. "But, I'm talking about when the time comes to actually fight, as it inevitably does. Then we have got to look at the army of the enemy and defeat it. Once the decision has been made by either belligerent to fight, it's time to destroy the opponent's means to do so. At that time all the fancy theory and endless classroom philosophizing don't mean squat. You can look at lines of communication and capital cities all you want, but the defeat and destruction of the enemy's fighting force is the bottom line."

Colonel South at this point suggested, "We might be well served to attempt to define center of gravity and eliminate any ambiguity that may exist. I suggest that we use the Army's operations manual, FM 100-5, as the authoritative definition for center of gravity. Is anyone opposed?"

They all nodded agreement, so Colonel South produced a manual from his briefcase, turned to a dog-eared page, and strained to read by the candlelight. "We find," he said, "that our doctrine defines center of gravity as an armed force's 'source of strength or balance. It is that characteristic, capability, or locality from which the force derives its freedom of action, physical strength, or will to fight.'"

"I will not accept 'locality' as part of the definition; otherwise, I have no argument with it," said Colonel Bearos. "It pretty much tracks with what Clausewitz has to say, except someone later in the explanation became a bit over enthusiastic."

"Doesn't it say something about the 'mass of the enemy force?'" asked Colonel Kitting.

Colonel South read further. "It does say that, at the operational level, center of gravity may be a part of the enemy force; 'the mass of the enemy force.'"

"Right!" shouted Colonel Kitting. "I knew the manual equated center of gravity as a vital or strong concentration of the enemy army! You see, locality, as it is used here, merely refers to the place where one will find the greatest mass. Strike an effective blow there and the enemy will not recover from it."

"With that caveat I agree with the FM." Colonel Bearos raised his eyes to the beamed ceiling, took a strong draught on his cigar, then blew the smoke straight up.

The last and by far the youngest member of the group looked puzzled. "That is sure not the way I interpreted the concept when I encountered it at the Command and General Staff College last year." He was a quartermaster major by the name of Speer.

"That's probably because it is only part of the discussion of center of gravity," said Colonel Clavis. "The manual is clear," he continued, "on the fact that a center of gravity might be any number of things, to include the mass of the enemy

force."

Colonel South directed their attention back to his reading of the manual by quoting, "As with any complex organism, some components are more vital than others....If these are damaged or destroyed, their loss unbalances the entire structure...."

"Does it give examples?" asked Major Speer.

"Yes. It does so for each level of war. At the operational level it suggests command and control centers, logistical bases or lines of communication. At the strategic level, it 'may be a key economic resource or locality.'"

"We can see an example of an economic center of gravity today in the war between Iran and Iraq," Major Speer interrupted. "Interdiction of Iran's oil exports is a vital part of Iraq's war policy. Iran must be able to market her oil in order to pursue her war aims."

"I don't know where those guys who wrote FM 100-5 came up with that operational stuff," grumbled Colonel Kitting. "There are few people who have studied Clausewitz as intensely as I, and I will tell you that he says that the 'center of gravity is found where the mass is concentrated most densely.' What do you think center of gravity means, anyway?"

"Hamilton, my friend, you are right," Colonel Bearos said, addressing Colonel Kitting. "We have probably lost something in the translation of Clausewitz's term. Wasn't his original word schwerpunkt? Doesn't that more precisely translate as a concentration of mass?"

"Exactly," replied Colonel Kitting. "Clausewitz was referring to the concentration of one's own forces against the mass of the enemy force in a way that allows one relative superiority at the decisive point."

"Why do we have to concern ourselves with the exact translation of schwerpunkt? Is On War the Divine Word as passed to Clausewitz? Are we not capable of independent thought? Can we not build on the fine work of the man without being accused as heretics?"

The speaker was Colonel South. He finished his drink, pushed back his chair, and started for the bar. Halfway there he turned and asked if he could get something for anyone. All of them gave their requests.

"I think our operations manual, FM 100-5, does exactly that," said Lieutenant Colonel Clavis. "The concept of center of gravity is Army doctrine and it is defined more broadly than the Clausewitzian schwerpunkt. It does not preclude, however, the center of mass or a major formation of the enemy force from consideration as the center of gravity."

"If any doctrinal term is to have validity to me," said Major Speer, "it must also have utility. The concept of center of gravity as the mass of the enemy army seems so obvious--it is a truism, and therefore doesn't help my planning at all. I mean, of what value is this business of attacking the enemy's center of mass? Of course I must destroy the enemy and of course the best place in which to do it is where he is concentrated most

densely."

Colonel Bearos jabbed his cigar at Speer and said, "Your understanding of Clausewitz does not permit you to develop the concept fully as he intended it. You see, you will seldom be presented in war with a single mass of the enemy. Usually, you will be opposed by a number of concentrations and you will have to decide which you will strike. In such a situation, you must weigh the relative value, and inherent risk, of concentrating your center of gravity against the enemy formation that presents the best chance for causing his collapse. Perhaps your intelligence has told you that a particular part of the enemy army is more formidable than the others. If you can defeat that part the chance of the enemy rallying the remainder of his army into a cohesive whole is negligible and you have therefore made his continuation of the war untenable."

"An example of such a situation," Colonel Kitting stated, "can be found by looking at the battles on the eastern front in World War II. Faced with both the forces of Germany and her allies, the Russians knew that defeating German formations would have a cascadingly disastrous affect on the others. On the other hand, there were times when attacking and defeating the weaker, less motivated allies would expose a German flank or rear. This determination is part of the art of warfighting. This is what center of gravity is all about."

"There should be little doubt," Colonel Clavis said, "that enemy formations may be centers of gravity. The operations manual clearly makes this point. But it is a mistake to always view it as the mass of the enemy. In my opinion, it is more often something besides a part of the enemy force."

Colonel South returned with another round of drinks for the group and they took a few minutes to pass them around and make feeble attempts to pay. I realized I had been staring at them quite intently and was suddenly grateful for the dark which cloaked my interest. I turned on the barstool, ordered another brandy and glanced around the lounge in the mirror. The renewal of the conversation at the group's table soon drew my attention back to them.

"There are certainly many other factors to be considered," said Colonel Kitting, "but the bottom line has to be the enemy army. If it is destroyed, the rest is irrelevant. Think about it. The center of gravity for Alexander, Gustavus Adolphus, and Frederick the Great was their army. Destroy the army of these men and they would have been considered failures."

"Sir, that defies credulity! It's true," continued Major Speer, "but to whom does it not apply? That's what I mean when I say the concept of center of gravity, used in that manner, has no utility. Are you suggesting that all NATO would have to do in a war is destroy the Warsaw Pact? I can figure that out without Clausewitz."

"Major Speer is right," Colonel South responded. "For the leaders you just named I think you have the center of gravity

reversed. Rather than their armies being their centers of gravity, they were in fact the centers of gravity for their armies."

"What do you mean?" asked Colonel Kitting. "How could they have achieved all they did without their armies?"

"Oh, they couldn't have, it's true," said Clavis. "But that's one of those truisms that Major Speer mentioned. What would have happened had Alexander the Great been killed as he set off on a campaign? Alexander, just as Gustavus Adolphus and Frederick the Great, was the strength of his army; without him it had no direction or purpose."

Colonel South reflected on Clavis' points for a moment, then said, "I've wrestled with this business for quite awhile, and about the time I decide one way or the other I read a new article and find myself drifting again. Major Speer says that the Clausewitzian concept of concentration of mass has no utility. I don't agree. In fact, the notion of mass is one of our principles of war. Of course, the normal usage of the term is in regard to one's own force, that is, we attempt to mass a preponderance of combat power at the right time and place. But, can it not refer also to the mass of the enemy force? A prudent planner, determining that a particular concentration is the hub of the enemy's power must act to damage or destroy that concentration. Part of the operational art is the ability to quickly mass one's own forces, deal the enemy a telling blow, then disperse before the principle of mass presents such an opportunity to the enemy. Modern armored forces give commanders the ability to mass quickly and disperse quickly, while modern airpower provides a way to destroy concentrated combat formations."

"And nuclear weapons make mass an even more dangerous phenomenon," added Colonel Kitting.

"All of which proves Clausewitz right, even as we step into the twenty-first century," said Colonel Bearos. "Despite changes in weapons, commanders must determine where the enemy center of mass is and destroy it while protecting their own center of gravity or center of mass, whichever you prefer."

"Remember, please," said Colonel Clavis, "that center of gravity as U.S. Army doctrine is not interchangeable with center of mass, and I'll tell you why."

"I've got to hear this," chuckled Colonel Bearos. "Ham, I'll buy a round of drinks if you can find a waitress."

Lieutenant Colonel Kitting rose and moved off toward the hallway.

Colonel Clavis continued. "You have correctly described the concept of mass as a principle of war, Colonel South, but our doctrinal concept of center of gravity deals with more than that, as is evident from what we read in the manual. While the value of destroying the mass of the enemy force is indisputable, one does not always have the ability to do so. When the North Korean army had pushed the United Nations forces into the Pusan perimeter, where was the center of mass of the enemy?"

"Just north of the perimeter," responded Colonel South.

"That's correct. Although the North Koreans had troops throughout the peninsula, the bulk of their army, the greatest concentration of combat force, was pressuring the desperate UN pocket. Where, then, was the enemy center of gravity?"

"Why, it was right there. Right there surrounding Pusan," declared Colonel Bearos. "You put a few silver bullets on them and you've destroyed their center of gravity and you have ended the war. And I mean ended, not an armistice that has cost hundreds of lives ever since!"

Colonel Kitting arrived with a haggard waitress and a tray of drinks. Major Speer took his and noisily stirred the ice about the glass. He looked long at Colonel Bearos, drew a deep breath, and said, "But, nuclear weapons were not an option, sir. Not only were they politically unacceptable but they were militarily infeasible. The territory occupied by the enemy was that which we were obliged to protect! Without the nuclear option, what good was your center of gravity? You see, this is part of what bothers me about your interpretation of the concept. It is easy to say that we must destroy the center of mass of the enemy, but it's another thing to do it. How were the UN forces to attack the North Korean center of gravity?"

Colonel Bearos stirred his own glass while he pondered his reply. It was Colonel Kitting, though, that answered.

"Even without nuclear weapons, MacArthur was able to attack the enemy center of gravity. He used the indirect method and struck the North Koreans deep in their rear. Having thus cut their lines of communication and supply, he was able to destroy their army surrounding Pusan."

"Do you think," asked Major Speer, "that the term as you use it would have been of particular value to MacArthur? Or was he merely exercising operational art by recognizing an enemy weakness and accepting risk in order to take advantage of it? I mean, do you really think he would have said, 'Aha! The enemy mass, therefore his center of gravity, is surrounding Pusan. Now that I have deduced this, I can deal him a blow.'"

The table lapsed into an uneasy silence. It was clear that Colonel Kitting was annoyed by Major Speer's brusque response.

Colonel Clavis moved them away from the awkwardness by saying, "The Inchon Landing was indeed a classic case of operational art, and it is an excellent example of exploiting a center of gravity. As the relatively unsophisticated North Koreans pushed their way south, they stretched and strained their lines of communication to the breaking point. They had no navy to speak of and their transport aircraft were virtually nonexistent. They had an army at the end of a single ground route of command and supply. So, instead of defining the North Korean center of gravity as the army itself, MacArthur recognized that the enemy's potential success depended on that tenuous ground route, which was at the same time vulnerable--a classic case of center of gravity as described in FM 100-5. MacArthur elected to seize the initiative from the enemy, fall

upon his lines of communication, and disrupt his command and control. It was a blow from which the North Koreans never recovered. It truly unraveled their offensive. Did MacArthur strike a blow at the enemy center of mass? He did so only by attacking their center of gravity."

"So," asked Colonel South, "find the element of the enemy plan or army that all else hinges on and you will find his center of gravity?"

"Yes, that would be the epitome of the concept. But it goes well beyond the military, as we have seen throughout history, to include politics, economics, and even cultural issues."

"Hogwash!" cried Colonel Bearos. "All you have shown is an indirect attack on the hub of the enemy combat power. You haven't proven that the center of gravity is anything other than the enemy army, but you have convinced us that there are many ways of attacking it!"

"If carried to its ultimate extension," said Major Speer, "the concept of center of mass logically develops to the entire enemy population. They comprise, replace, and support the army. To pursue the policy, one may be doomed to a war of attrition."

"Do we agree," asked Colonel Clavis, "that the center of gravity represents the balance and strength of the enemy?"

Everyone nodded affirmatively.

"And do we also agree that discovering and attacking the enemy center of gravity is the essence of operational art?"

Again, they all indicated their assent.

"Our difference, then, is whether the center of gravity is strictly the greatest concentration of combat power, as a literal interpretation of Clausewitz seems to suggest, or is a less tangible aspect such as a population center, a key communications node, or an exploitable weakness in an alliance. Am I correct?"

Colonel Bearos spoke for the group, "That is correct, Clavis. I say that those intangibles you speak of are certainly important, but they are ways we can attack the true center of gravity, that is, the schwerpunkt or concentration of mass."

"I concur with Colonel Bearos," said Colonel Kitting. "If I remember my lessons at the Armed Forces Staff College correctly, you have confused those other factors you are calling centers of gravity with Jomini's decisive points. According to Jomini, decisive points were to be massed against as a first priority."

"Indeed," added Colonel Bearos, "Clausewitz himself states that we must achieve superiority at the decisive point. Your notions of population and communication centers, boundaries between armies, and even lines of communication are not centers of gravity, but are really decisive points."

"I think not," replied Colonel Clavis. "Jomini's use of decisive point is place-oriented; it may be a piece of terrain or it may be the location of a portion of the enemy army. It also is something against which military force can be applied, and as such could not include things like political processes or public opinion."

"Or the mind of the enemy commander!" chimed Major Speer.

"The what?" shouted Colonel Bearos. "The mind of the enemy commander? If my G3 came in and told me that the enemy center of gravity was the mind of the commander he'd be on the first thing smoking!"

Major Speer shrank back into his chair. Hamilton Kitting grinned widely and winked at Colonel South. "That's a clear example of drifting too far from the basics that win wars," he said. "When we allow soldiers to spend valuable time chasing such ethereal nonsense we need to take a hard look at ourselves."

"It does seem preposterous, I admit," said Colonel Clavis. "But consider a situation where your intelligence has discovered that the enemy commander is very superstitious. If you could somehow use his beliefs to cause him to act or fail to act in your favor it could be very important to you. If his superstitions could be manipulated to convince him that you were not going to attack, or to cause him to believe your attack was going to occur in the wrong place, might not that be of immense value to you? Might it not mean the success or failure of your campaign?"

They stared at him; their very silence a confirmation of his words.

"Might it not, then, be a true center of gravity?"

After a long period of silence, Colonel South said, "The Allied efforts in World War II to convince the Germans of the wrong location for the cross-channel assault were most effective against Hitler himself. In a sense, I suppose that situation could be construed as an example of the mind of the enemy commander being a center of gravity."

"Let's continue our examination of the center of mass versus the 'vital factor' issue," Colonel Clavis said. "I apologize for introducing a new term, but I am merely labeling the concept of center of gravity as used in FM 100-5 without using the term we associate with Clausewitz."

"If I may, let me use an historical example from the Civil War," Clavis continued. "The battle of Vicksburg was fought in compliance with the Union strategy to split the Confederacy at the Mississippi River. When Grant arrived to take charge of the battle, where were the Confederate forces?"

"They were in Vicksburg under the command of Pemberton and to the East near Jackson under the command of Johnston," replied Colonel Kitting.

"Where was the bulk of the Confederate Army?"

Again, Colonel Kitting responded. "In the fortress of Vicksburg. Johnston had only about 10,000 men south of Jackson, whereas Pemberton had roughly 35,000."

"The mass of the Confederates was concentrated most densely, then, at Vicksburg itself. If center of gravity equals center of mass, it follows that Grant should have attacked Vicksburg straightaway. But Grant knew that his objective was to open the river for the Union, deny its use to the Confederacy,

and split the South from its western support. Vicksburg had no particular operational value except as an obstacle to the accomplishment of Grant's strategic mission. Faced with a nearly impregnable fortress and an army only slightly smaller than his own, Grant determined that Pemberton's center of gravity was his relative lack of mobility. In other words, the Confederates were tied to Vicksburg. If Pemberton had realized that Vicksburg was just a place, and that his true mission was to stop Grant, he would not have clung so tenaciously to the city."

"Didn't General Grant attack Pemberton's lines of communication?" asked Colonel South.

"He did more than that," Clavis went on. "He fixed Pemberton in Vicksburg with Sherman's corps, while he maneuvered the bulk of the army south, across the Mississippi. After he had gained a foothold on the east side of the river, Grant massed his army, to include the corps that had been demonstrating at Vicksburg, cut his ties to a logistics base by taking along the bulk of the supplies he would need, and marched toward Jackson. In so doing, Grant was able to provide himself several operational possibilities. First, if Pemberton stayed in Vicksburg, Grant would be able to fall on Johnston's contingent and defeat it in detail, denying Pemberton valuable reinforcement and, most importantly, denying him the capability of massing an army of equal or superior strength to Grant's. Secondly, if Pemberton had chosen to leave Vicksburg and attack Grant as he moved toward Jackson, he would have given up the advantage of his defensive positions and Grant would have been able to fight a smaller force on equal terrain. Compared to assaulting the city from the west or north, where the ground was not only well-defended but wholly unsuited for offense, Grant was pleased to take a chance on Pemberton attacking his flank."

"Didn't Grant also cut Vicksburg's lines of communication?" asked Major Speer.

"Yes, he did, and that was the third of Grant's operational possibilities. Allowed to move to Jackson, Grant would cut the railroad between there and Vicksburg and isolate the city."

"The Union army received an extra advantage when Pemberton sent a force from Vicksburg to attempt to join Johnston," added Major Speer. "However, it arrived too late and Grant was able to defeat the Confederate force at Jackson and then turn and defeat the reinforcements in detail. This further reduced the Vicksburg garrison and, having cut the city off from all resupply or support, Grant was able to lay siege to it from its most vulnerable side, the east."

Colonel Kitting smacked his fist on the table. "Vicksburg and Inchon are merely examples of the indirect approach!" he roared. "How many times must it be said? They do not lead one to conclude that the enemy mass, or schwerpunkt, were not attacked! In those battles the decisive points were in the enemy rear. What better way to attack the center of gravity?"

In his agitation, Colonel Kitting knocked Colonel Bearos' drink over and as it ran onto the colonel's lap, the entire

table went into a flurry of scraping chairs and desperate napkin swipes. Colonel Bearos was visibly angered, but despite the flush of his face, he bit hard on his cigar and said nothing. Colonel Clavis motioned the waitress over and as she completed the cleanup, he asked her to bring them another round of drinks.

Colonel Clavis thought about Kitting's remarks for several moments, then replied, "The purpose of determining the enemy center of gravity is not necessarily to find a substitute for destroying him, although it frequently has that capability. Rather, its purpose is to allow the war or the fight to be conducted to one's own advantage. It represents a thought process whereby we attempt to negate enemy advantages while minimizing our disadvantages. Your concept of concentration of force normally does not do this, and Jomini's decisive points are too restrictive. Instead of concerning ourselves with exact translations of terms, why not accept the more useful concept in our own doctrine?"

"Because the concept comes from the works of Clausewitz and Jomini, and the manual has it wrong!" bellowed Bearos.

"It is only a tool for planning, just as the Principles of War," said Colonel Clavis. "But, let's go back to Vicksburg again. A rule to follow when considering center of gravity is to not only attack the enemy's, but to protect your own. When Pemberton discovered that Grant had successfully crossed the Mississippi and was marching northeast toward Jackson, what did he do?"

"He hoped to fall upon Grant's trains and cut what appeared to be a vulnerable line of communication," said Colonel Kitting.

"That's right. But his scouts were unable to find Grant's supply line. Why?"

"You said earlier that the Union army had taken their supplies with them on the march to Jackson," answered Colonel South.

"After Grant had gained his lodgment on the east bank of the Mississippi and marched inland, what was the Union center of gravity?"

"It should have been their line of communication," responded Major Speer, "which would have been vulnerable to interdiction by soldiers operating out of Vicksburg."

"Precisely," said Colonel Clavis. "So you see, Grant not only recognized and attacked the Confederate center of gravity, but also recognized and protected his own."

"Why do you 'center of gravity equals magic' buffs more often than not deduce that the elusive center of gravity is the enemy's lines of communication?" asked Colonel Bearos. "How moronic! Every army has lines of communication but the mere act of cutting them is no guarantee of victory."

"As I've said, sir," replied Colonel Clavis, patiently, "center of gravity isn't a magic formula for victory, but it helps attain victory by making the situation tough for the enemy. He is fighting on our terms or under conditions of our choosing. In modern warfare sustainment is just as important as

operations. If one can deny or substantially reduce sustainment of the enemy, has not the margin for victory shifted to one's favor? How long will a limb survive if a tourniquet squeezes its blood supply away? How could Rommel roar through North Africa without fuel? How could the Japanese hold their defensive perimeter when Allied submarines interdicted all but a few of their resupply ships? Of course we frequently identify LOC's as centers of gravity; they frequently are! Consider, too, that our primary practical experience in working with centers of gravity has been in map exercises. Due to the two-dimensional nature of such exercises, we frequently determine that lines of communication are centers of gravity. That is, our choices are limited because we have only the map and the artificial array of enemy forces to consider. Let me make two final points on lines of communication. Despite their criticality, they are not always vulnerable to interdiction, and, last, to qualify as centers of gravity, lines of communication must assume an importance beyond mere resupply. They must transcend the normal sustainment dependence of a force."

"I see your point," said Colonel South. "And since you mentioned the Japanese in the Second World War, their center of gravity resembled that of the defenders of Vicksburg to some degree. The Japanese, in an effort to form a defensive perimeter, occupied and fortified islands throughout the Pacific. Once in position, however, the army was immobilized. It was dependent upon the navy, but because of heavy losses, the navy was unable to keep the widespread detachments resupplied or to allow the army to shift forces as necessary. MacArthur, therefore, was able to bypass numerous Japanese-held islands and concentrate on those he needed to continue to project airpower toward Japan."

"How would you use your concept in that example, Colonel Bearos?" asked Major Speer. "If the 'vital factor' is merely a way to indirectly attack the center of mass, how could MacArthur bypass the bulk of the Japanese army?"

"Well," responded Colonel Bearos, "he was simply striking at the real center of gravity of Japan--her homeland. That's where MacArthur was headed."

"But, in MacArthur's theater," protested Major Speer, "a large portion of the enemy force was being bypassed. If we agree that the determination and attack of the enemy center of gravity is the essence of operational art, why wasn't MacArthur destroying those enemy-occupied islands? Didn't Clausewitz say that the heaviest blow should be struck at the greatest concentration of enemy troops?"

"And I tell you, Major, that the center of mass of Japan was in the home islands themselves!"

"This seems to bring us back to the point that was made before," Colonel South offered. "The concept of center of mass logically extends to the entire enemy population. But, theater commanders, by means of campaign plans, attempt to attain end states that achieve or support the strategic objectives of the

nation. If this can be done without destroying the enemy's armed forces, all the better, as I'm sure Sun Tzu would agree."

"Which illustrates once more my problem with the strict translation of the Clausewitzian center of gravity," said Major Speer. "How would that concept help a theater commander achieve national goals except through attrition? I can see me discussing the idea with a reporter: 'So, Major Speer, I understand we now have this brilliant military concept, the center of gravity. Tell us about it.' And I reply, 'Well, it's the enemy. You see, we have determined after long and careful study, that in order to win wars we must defeat the enemy.' Terrific. Now I can whip out a campaign plan to end all campaign plans. Move over, MacArthur."

Colonel Bearos squinted his eyes and glared at the major through candlelight and cigar smoke. He wasn't sure if he should treat the younger officer's acerbity as intellectual honesty or a slur upon himself.

There was apparently little to debate for Colonel Kitting. He leaned over the table toward Major Speer and jabbed a finger in his chest. The veins on the colonel's temples swelled. "I've just about had enough of your insolence, Speer! You had better remember who you're talking to!"

"I'm sorry, sir, I meant no disrespect," stammered Major Speer.

"Alright, relax everyone. We're just discussing ideas and no one should feel emotional or personal about them," said Colonel South pleasantly. "Come on, Ham. It's OK."

"What's your first name, Major Speer?" asked Colonel Bearos.

Nervously, the major replied, "Bernard, sir. But I go by Buck."

"Bernard?" exclaimed the colonel, "Hell, no wonder you go by Buck!"

"My middle name is Buchanan. That's where Buck comes from."

"OK, Bernard Buchanan Speer," said Colonel Bearos, "let me buy you a drink."

With the exception of the still smoldering Colonel Kitting, everyone seemed relieved to hear the peace offer. The bartender, also glad to have the confrontation end quietly, came to take the drink orders herself.

The rain continued its violent assaults upon the lounge window, and even though it was shrouded in heavy curtains, it seemed as though the storm might break through into the darkened room at any time.

"I'd like to go back to Major Speer's point about theater commanders and national goals, if I might," said Colonel South. "It's often not so difficult to determine a center of gravity when we have the advantage of an historical perspective, but it's a lot harder to find one in a contemporary situation." He looked directly at Colonel Clavis and asked, "What do you see, Jefferson, as the NATO center of gravity?"

Colonel Clavis didn't hesitate. "Until a war proves or

disproves peacetime theories on specific centers of gravity, it's all speculation," he laughed, "and I can speculate with the best of them. I used to think the NATO center of gravity was its slowness to respond politically, but although I still see that as a weakness, it is not the center of gravity. Instead, it has to be the ability of the U.S. to reinforce. Now, think about this for a moment. This does not mean that the war is over if the Warsaw Pact can successfully cut the US link. Quite the contrary, for most of Western Europe and the NATO allies will still be fighting hard, the US forces in Europe will be fighting, and the US will still be at war with the USSR. The difference is that the USSR can now deal with a land war that she can manage on the continent. Were she faced with an intact NATO lifeline to the US and Canada, the war would be ever so much more difficult. That is the purpose of the center of gravity: it may or may not win the war alone, but without it victory is dependent on the "lottery of war," to quote Christopher Duffy. In fact, more often than not, victory without consideration of centers of gravity is practically inconceivable."

As the group pondered, Colonel Kitting asked, "But if the Warsaw Pact can find a part of the NATO armed forces that is crucial to its defense, might not that be a center of gravity?"

"As I've said, I do not rule out military forces as candidates for the center of gravity," Colonel Clavis replied. "I applaud an open-minded analysis. I despise, however, the preconceived notion that the enemy army, or even a part of it, is automatically the candidate. But, since you mention it, can you tell me what that NATO center of gravity, in terms of the military forces, might be? If you were a Soviet warplanner, using your theory that the enemy army comprises the center of gravity, where would you place it? How would you address it? Is it really the center of mass of the enemy army? Or is there a particular part of the army which, if destroyed, will make the NATO defense untenable?"

"Surely," Colonel Bearos replied, "the center of mass of NATO is the concentration of US and German armored forces in the Central Army Group."

"And just as certainly the NATO defense would rupture and collapse if the Warsaw Pact destroyed those forces?"

"Yes, of course!"

"So that is your center of gravity, if your argument is to be consistent. And having identified it, do you now propose that your main effort be against a portion of the NATO center, such as we find at the Fulda Gap?"

"You shall not trap me so easily, my friend. It does not follow that, having identified the German and American forces along the CENTAG front as the NATO center of gravity, I must now throw my army against them in an operational frontal attack!"

"Certainly not. That would be contrary to basic military principles, wouldn't it? Just what would you do, sir?"

"Why, I would fix the CENTAG forces with a supporting attack, but make my main effort in the north. There I would drive for the ports with a portion of my force, and swing to the south with the rest in order to sever communications and air support as I enveloped the forward deployed NATO combat forces. Then, having isolated the CENTAG front, I would push westward with my former supporting attack while my penetration force struck them from the flanks and rear."

"In this manner, then, you would destroy the NATO center of gravity?"

"Exactly."

"A good plan, to be sure, but how has your concept of center of gravity helped you in its formulation?"

"Well, I identified the center of gravity and I attacked it. I merely used the indirect approach in doing so."

"How long have you been conversant with this concept of center of gravity?"

"I try to stay abreast of professional reading, and I guess I first started seeing the term in the past few years. I think it came along with the Army's renewed focus on the operational level of war and Clausewitz and all that."

"I see. How would you have conducted your attack against NATO three or four years ago? Pre-Clausewitz, if you will?"

"I suspect I'm stepping into a trap, but I would have executed my attack in the very same way."

"Of what value, then, was your concept of center of gravity? Did it really provide you with a special insight with which to defeat the enemy? You used the old METTS or METT-T, attacked the enemy weakness while avoiding his strength, and chose one of the three basic forms of maneuver. Center of gravity played no role in your plan. You merely substituted it for the "enemy" portion of your METTS analysis. I submit that you will always be bound by this same process so long as you rigidly view center of gravity as the enemy army. You will not necessarily be the poorer for it, nor will you be the richer for having opened your mind to another valuable planning tool."

"In other words," Colonel South stated, "the concept of center of gravity should allow the theater commander to look beyond the armies on the ground. It should allow him to consider a very broad range of factors that affect war, from which he can determine those that are not only vulnerable, but which, if successfully attacked, will produce a substantial result."

"What is the center of gravity of the Warsaw Pact?" asked Colonel Kitting.

"Destroy the Soviet army and the entire Warsaw Pact will crumble," Colonel Bearos replied.

"Absolutely true," answered Colonel South. "But how do we destroy such a substantial force?"

"We look for a part of it that is critical to the rest; a part that will cause their collapse if it is defeated," declared Colonel Kitting, confidently.

"Any suggestions, Ham?" asked Colonel South.

"Well," said Colonel Clavis, "Why don't we do a quick analysis and see if we can find a center of gravity for the Warsaw Pact. While the Soviet army is, without a doubt, the source of strength and power of the Warsaw Pact, do we have the capability to destroy it? Maybe there is something else we can find which we can successfully attack."

"We mentioned alliances as a possible candidate for a center of gravity before, and the cohesion of the Warsaw Pact is a definite weakness," suggested Major Speer.

"Yes, but can we do anything to influence it in time to prevent a big chunk of Europe from being seized?" asked Colonel Bearos.

"He's right, Buck. What else could be a candidate?"

"Their lines of communication are on land and are quite numerous," Major Speer said thoughtfully, "so, that's probably not it. Wait a minute! If the NATO center of gravity is reinforcement and sustainment from North America, then the Warsaw Pact center of gravity is their navy! How else could they sever that link?"

"Another good candidate, but what if NATO's maritime forces were able to sink every Warsaw Pact ship afloat?"

"Since the Soviets are a continental power and would have no need for external supply or reinforcement, I guess destroying the navy wouldn't unhinge their war effort."

"I agree. The enemy center of gravity is not necessarily related to one's own," said Colonel Clavis. "Now, given NATO's superior technology but decidedly weaker ground combat forces, what does the Warsaw Pact need to enable it to bring its massive ground strength into the Western European fight? Is there anything that those forces would be vulnerable to as they moved to positions from which they could deploy?"

"Yes," Colonel South responded, "they would be massed along roads, their equipment and logistics would be on railroads, and NATO air forces could not only slow them significantly, but could destroy a great percentage of them before they arrived at the front!"

"What would give the Warsaw Pact the best protection against deep air strikes, would allow them to move their heavy follow-on forces rapidly on roads and trains to the west, and ensure continuous, uninterdicted fuel and ammunition?"

"The Warsaw Pact air forces," replied Major Speer, "and their air forces also give them the capability of interdicting NATO's reinforcements and seaborne sustainment."

Colonel South nodded agreement, then said, "In fact, one could build a strong case to support NATO air forces as our own center of gravity. They provide our best means of deep conventional attack, protect our ports, command and control, and lines of communication, and, of extreme importance, give us the best means of destroying what we have just determined to be the Warsaw Pact center of gravity. But, as I mentioned before, I've struggled with this whole issue myself for a long time, and I am prepared to concede that the doctrinal center of gravity is

certainly applicable at the strategic level. I know you've said, Jefferson, that you believe that forces themselves may be centers of gravity, but your identification of the air forces as that of the Warsaw Pact confirms my belief that, at the operational level, destroying the enemy's armed forces must be the focus."

"Good point, Mike," said Colonel Bearos. "Clausewitz allows for strategic centers of gravity and gives possible considerations such as capital cities, key allies, public opinion, and even the personalities of leaders. All of which is fine for the strategists. An operational commander, however, must identify which of the enemy's forces are key to his war effort and strike a blow at them with as much strength as can be massed. The larger the defeated force, the more decisive the victory."

Major Speer winced at the last statement, but sipped his drink and said nothing.

"There are many examples of centers of gravity at the strategic level," said Colonel Kitting. "If we take those possibilities that Clausewitz gave us, we can apply them anywhere we look in the world today."

"An example of a capital city as a strategic center of gravity is Seoul," said Colonel Bearos.

"And Paris," added Kitting.

"Guerrilla wars frequently are aimed at public opinion," Colonel South mentioned, "and we can find an example in the IRA's efforts to cause the British people to tire and give up their commitment to Northern Ireland."

"You can see a case of an alliance being targeted as a center of gravity in the Vietnam War," said Colonel Bearos, "where the North Vietnamese attempted to undermine the determination of the United States to support the Republic of Vietnam."

"There may be a similar motive in the various leftist and terrorist movements against NATO," Major Speer joined, "and the bond with the U.S. might be considered a center of gravity for Israel."

"A particularly aggressive leader in a democracy may find a well-funded and pervasive campaign directed against him in the next election," Colonel Bearos added. "And speaking of leaders as centers of gravity, the U.S. certainly fingered Khadaffi as the key to Libyan terrorism."

"Is there any doubt that Khomeini is the center of gravity in Iran?" queried Colonel Kitting.

"So you see, Clavis, it's just as Mike suggests," beamed Colonel Bearos, obviously enjoying himself. "Center of gravity, as you define it, may be useful at the strategic level, but at the operational level, it is always the enemy army. Furthermore, your concept cannot be used at the tactical level except by the most bizaare stretches of imagination. Can one possibly think of a center of gravity at the tactical level that would not consist of the enemy force? Center of mass, on the other hand, is quite

useful at any of the three levels of war. The point of war is to destroy the enemy armed forces in order to bring the enemy nation to our terms of peace and consequently realize our political objectives."

"Perhaps you believe that a company commander should worry about the mind of the enemy commander!" laughed Colonel Kitting.

"Or a squad leader should seek to change public opinion!" Colonel Bearos added, then enthusiastically said, "No, my friend, tactical commanders are concerned only with the destruction of the enemy."

"Tactical commanders operate in a much different time spectrum," Major Speer retorted. "They deal with things that influence the battle immediately or within days at the most. Strategists may be looking months or years into the future, and they have capabilities at the national level to influence factors well beyond the battlefield."

Colonel Clavis listened attentively to these comments, then said, "I disagree that center of gravity as I define it has utility at the strategic level alone, albeit that is an oft-argued statement. First, almost all of our discussion about NATO and the Warsaw Pact dealt with operational art. Our analysis of Vicksburg was also operational. But, never mind, let me answer Colonel Bearos' points. I agree that there is little value in applying the concept at the tactical level. In tactics, everything is much more compressed. There isn't the depth of action available to the commander; he is charged with a well-defined mission and specific objectives and must produce results in the very near term. One can readily deduce many critical elements of the tactical battle, but it would be difficult to ascribe them a role of continuity and balance for the enemy. Tactics seems much more the realm of decisive points and key terrain, both of which can change very fast."

"As we move upward through the various levels of command," Clavis continued, "the shape of the concept of center of gravity begins to form and come into focus. At brigade and division, we would find it difficult to apply. The most important factors there are firepower, mass, and speed, an aggressive application of which can render the subtleties of the battlefield irrelevant. At corps level we can begin to see different possibilities emerge, to include psychological, cultural, or ethnic considerations. The range of factors that can be attacked, or at least manipulated, becomes more clear depending on the role of the corps in the theater. Nevertheless, I would be more comfortable keeping the concept of center of gravity well into the operational and strategic arenas."

"What about center of gravity at the operational level?" prodded Kitting.

"Well, to illustrate the way I see it transcending the mere concentration of combat power against a major formation or component of the enemy, consider the projection of force against a nation separated from another by a body of water, a situation common to our own country. What are the military

requirements for such an operation?"

"A navy is required," responded Colonel South, "as both a means of projection and as protection for the force."

"In modern times, an air force is necessary for the same reasons," added Colonel Bearos.

"You have to have a force to project," Major Speer joined, almost sarcastically.

Colonel Clavis continued. "Good. Now, what must our projection force do upon reaching the shores of the hostile nation?"

"It must seize a lodgment from which to land and move inland and from which to sustain itself," Colonel Bearos answered again.

"And if it can be prevented from establishing a lodgment, it cannot be successful, is that correct?"

After a moment, Colonel South committed himself. "Yes, that is true. The projection of force onto hostile territory requires a lodgment, expanded from either a beachhead or an airhead."

"From the standpoint of the nation against which this force is being projected, what does it need in order to defend itself?"

"A navy and an air force to attack the invaders offshore, and an army to repel them when they land," declared Colonel Kitting.

"Those would be desirable, but what is essential?"

"The minimum requirement would be a force capable of preventing a successful landing, regardless of its composition of air, ground, or maritime elements," said Major Speer, warming to the discussion once more.

"OK, we have one nation, the invader, which has the capability of projecting its power to the territory of another nation, the defender. If the defender is too weak to defeat the invader at sea or on land in a conventional war, but is strong enough to prevent his establishing a lodgment area, what are the operational centers of gravity?"

Major Speer was quick to answer. "For the invader, the center of gravity is the establishment of a lodgment area. If he is prevented from doing that, he cannot succeed."

"For the defender, the center of gravity is the timely discovery of the invader's beach or airhead," stated Colonel South. "He must discern the landing site so that he can mass his weaker force against the invader while the latter is most vulnerable. If the defender is fooled and waits too long to act, the invader may become too strong."

"You are scholars, indeed, gentlemen," said Colonel Clavis as he lifted his glass in a toast. "And such circumstances exist quite often, do they not? Napoleon wanted very badly to invade England, didn't he? He had an army capable of defeating the English, but he was unable to project it across the channel. In this case, what was the English center of gravity?"

"Their powerful navy," said Colonel South.

"And what did the French need to cross the channel safely?"

"Again, the answer is a navy."

"Let's assume that Napoleon was able to create a navy strong enough to get his army ashore in England," Colonel Clavis said carefully. "Would the English have been able to stop him?"

"Had they been able to mass in time to prevent Napoleon from landing in force, yes," Major Speer replied. "And the French center of gravity in that case would have been their ability to prevent the English from discovering the location of their landing site, for no army can defend everywhere all the time. Particularly in the defense of a shoreline, a defender will elect to screen forward and keep strong mobile forces in depth. That way, he can react to threats across a broad area."

Colonel South nodded energetically and added, "The same situation existed in World War II when the Allies were planning the Normandy invasion. The Germans were strong enough to repel an invasion force, but could not defend in strength all the potential landing sites on the French coast. The Germans had to determine the correct site in time to strike the Allies before they could establish a lodgment."

"Good example, sir," remarked Colonel Clavis. "What do you see as the German center of gravity at Normandy?"

"Just as I've said. They had to find out where the Allies would land, and having done so, they had to move their army quickly to the threatened area."

"The Allied plan for dealing with the enemy center of gravity was twofold," said Major Speer. "First, to mislead the Germans concerning the actual landing site they created the greatest deception plan in history, and secondly, Allied air devastated roads and railways by which the Germans could move to strike the invasion force."

"The Allies protected their own center of gravity, which was to establish a lodgment area, by tremendously effective secrecy combined with deception," Colonel South offered. "They knew they had to delay the Germans long enough to get a strong ground force on land in Normandy."

"I hope you can see from these examples, gentlemen, that centers of gravity at the operational level may be many things besides the center of mass of the enemy army. In some cases, even if it is well within our capability, destroying the enemy may be unnecessary."

"I'll give you an historical case of an unusual operational center of gravity," Major Speer said eagerly. "In the Russo-Finnish War of 1939, the Russian center of gravity was their need for shelter and warmth. The Finns, who had no hope of defeating the Russians or even a major formation in conventional battle, recognized this and burned everything the Russians might use."

"If you have to fight a guerrilla war," Colonel South added, "you may want to consider what T. E. Lawrence first told the world: rebels must have the sympathetic support of the population. That is their operational center of gravity."

Major Speer signaled the bartender for another round of

drinks. My brandy snifter was empty so I pushed it forward and waited to catch her attention myself. There had been no thunder for some time, now, and the rain was distinctly softer against the window.

Colonel Kitting noticed the easing of the storm, too. "Maybe this damned rain is stopping," he droned. "Shouldn't we get back to the BOQ?"

"Bernard, here, has just ordered us another round, Ham," Colonel Bearos said as he lighted a cigar. "We can't leave yet."

"Do you think," Major Speer asked Colonel Clavis, "that vulnerability must be a condition for a center of gravity? I've heard that said, but your example of the British navy against Napoleon seems to contradict it."

"I think vulnerability must be a consideration or we cannot exploit it. There will be many times, however, when the center of gravity will be beyond our reach. When that happens, we must find the next best alternative or advise against the war."

"Seoul is an example of a center of gravity that is not going to be within the reach of the North Koreans," declared Colonel Bearos. "They had better figure something else to focus on."

The drinks arrived and were being passed to their owners when Colonel South said, "I don't think Seoul is the center of gravity for Korea."

It was as though a live skunk had just been released on the table; everyone looked at Colonel South in disbelief.

"What!" exploded Colonel Bearos. "I can't believe I'm hearing this! You'd better stop drinking now!"

"Well, it does seem to be a widely held belief," Colonel South responded timidly, "but, I don't agree."

"Great guns, man," shouted Colonel Bearos, "that's absurd!"

"I suppose you know more about Korea than every military planner in the last thirty years?" Colonel Kitting queried mockingly. "Seoul is the governmental and financial heart of the Republic," he continued. "The city is a hub of every highway and railroad, and every means of communication in the country."

"You're on drugs, South," declared Colonel Bearos. "You take Seoul and you have the commerce and the bulk of the population of the country. The capture of Seoul would be viewed by the international community as victory and its captors would be considered the legitimate government."

Very deliberately, but very softly, Colonel South replied, "I certainly agree with the importance of Seoul; that is not a point of contention. But, I don't think Seoul is the center of gravity for the Republic of Korea. The loss of the city would be a great blow, but there are things more important to the country."

"OK, South, you have the floor," said Colonel Bearos.

"If a surprise attack by North Korea somehow managed to seize Seoul, the South would not capitulate. There is also the matter of a mutual defense treaty with the US to consider, not to mention virtually assured assistance by certain other

countries that were part of the UN effort in 1950. Seoul was captured early in that conflict, you may recall. What would be absolutely essential to Korea, especially if Seoul fell, is US support. The U.S. Navy and Air Force would have to isolate the theater, prevent sea or airborne envelopment, and ensure sustainment for the Republic."

"Furthermore, seizing Seoul would tie up too much combat power," he continued, "and in a campaign where speed is essential, the North Korean plan is more likely to try to isolate and bypass the city. The modern concrete and steel buildings, the ease of denying trafficability, a population that is patriotic and staunchly anti-communist, plus a sizable military and police force within the city add up to a long and hard battle for an invader. Also, given the road network and the mountainous terrain, bypassing Seoul will be a formidable task. Isolating it will be another tough ordeal, and will require more troops than the North can afford in the early stages of a war."

"Did I hear you identify the United States as the Korean center of gravity?" asked Colonel Clavis.

"You did," replied Colonel South. "But I hasten to add that my judgment is of the present only. Korea's rapid growth is altering many of today's Asian balances."

Colonel Bearos wrinkled his brow and squinted his eyes as though he were in severe pain. "If what you say is true," he stated, "then the North can't win a war she starts."

"Why is that?" asked Colonel Kitting, looking puzzled.

"Because! The United States will fight and will support the Republic of Korea. Our country is committed to their defense. We have troops there; we're in it from day one!"

"It all makes sense," said Major Speer. "The North Koreans recognize the US as the center of gravity. Why do you think they have made such an issue of US involvement? Why is the location of a single US infantry division along the main invasion route such a contentious issue with them? Not because of the combat power provided by the division, but because its presence guarantees US involvement in a war. "Team Spirit" brings fresh and heated invective every year by the North. Why? Because it represents reinforcement, sustainment, and, most importantly, commitment by the United States."

"Let me see if I have this straight," muttered Colonel Kitting. "The center of gravity of Korea is not Seoul, but instead is US support."

"Correct," answered Colonel South confidently. "But, again, you must understand that this does not reduce the importance of Seoul as a strategic objective. Now, whether you agree or not, can you deduce what I believe to be the North Korean center of gravity?"

"It's probably not Pyongyang," chuckled Colonel Bearos.

Major Speer deliberated, "OK, so if it's not their capital, it's sure not likely to be the North Korean army...."

"The North Korean army was defeated in 1950," Colonel Clavis interrupted, "but that didn't win the war."

"Sure," Colonel Bearos said quickly, "because the Chinese intervened in overwhelming strength." He paused for a moment, then added, "Ah, that's it! I'll bet you still see the Chinese--or the Russians--as the North's center of gravity."

Colonel South laughed, then tapped the table with his finger. "Their support is absolutely essential if the North Koreans are to prevent a ROK counter-offensive from sweeping right back to the Yalu! That is totally conceivable, unless China or the Soviet Union is determined to prevent it."

"That's interesting," Colonel Clavis said. "A war where the center of gravity for both sides is external support. In view of the fact that a nation must protect its own center of gravity, we can see why the North Koreans are so very careful about relations with China and Russia. Kim Il Sung has made great diplomatic efforts to gain approval for the dynastic passing of power to his son, Kim Chung Il; an act which is blatantly counter to communist ideology."

"If that's the center of gravity," asked Major Speer, "how do we attack it?"

Colonel South responded in his deliberate, crisp manner. "We must work to undermine Chinese or Soviet support of North Korea if she initiates aggression. We must make it clear that the United States is willing to go to full-scale war with any country that backs aggression by the North. We must also make it clear that we will fully honor our mutual defense pact with Korea, to include a counter-offensive to unite the country. The latter is required not only to seize the initiative from the North, but to ensure that they don't have the option of a 'free war,' where the worst they can do is keep what they have. Of course, for China and the USSR there are a number of sensitive issues associated with such a counter-offensive, to include loss of face due to the defeat of a client state, a drastic alteration of the balance of power in the region, and a free world military power whose borders suddenly extend to both countries."

The table was silent a long time. Finally, Colonel Kitting said, "If the centers of gravity for such a war are so unattainable, we won't have to worry about a war in Korea for a long time."

Colonel Clavis shook his head slowly, then replied, "Ham, you forget that wars are usually started for very irrational reasons, particularly when nations are controlled by dictators such as in North Korea. If wars were fought only after careful consideration of all things, to include centers of gravity, history would be far different."

The group fell silent. They sipped their drinks and stared at the top of the table. Except for their eyes, the face of each man was blank.

After several minutes, Major Speer looked at Colonel South and said, "Maybe there can be multiple centers of gravity. Couldn't both Seoul and US support be included?"

Colonel Clavis was the one to reply. "There are probably

cases where there is more than one center of gravity, and perhaps Korea is an example. Personally, I think there can be only one. If a planner lists more, I think he has missed the idea. He is more likely dealing with Jomini's decisive points."

"If there are too many centers of gravity, it contradicts and dilutes the concept," he went on. "But, centers of gravity will change over time and as a result of successes by each side in attacking or protecting them."

Major Speer pondered this for a while, then asked, "So, if a major port facility were a center of gravity for the attacker and the defender took action to deny it, the center of gravity would shift to something else?"

"Yes. Providing, of course that the denial were truly effective," answered Colonel Clavis.

Again the group lapsed into silence. But after only about half a minute, Colonel Bearos caused some startled looks when he banged his glass hard against the table, pointed at Colonel Clavis, and said, "I should like, Jefferson Clavis, to call your attention to one of the greatest captains of all time: Napoleon Bonaparte. In all his battles, all his victories, name one time when he considered this center of gravity of yours! Name one time when Napoleon emphasized a line of communication or some other such rot!"

Colonel Clavis fumbled with his drink while all waited to hear his response to this sound challenge. Colonel Bearos sensed a weakness and leeringly leaned forward to watch the junior officer falter.

Finally, Clavis replied, "You're right, of course. Despite his often effective work against alliances at the strategic level, Napoleon was very much center of mass or force oriented."

"And he won battles, didn't he?" demanded Colonel Bearos. "Napoleon sensed the critical place to fight, he knew where to attack, and he defeated his country's enemies in a string of brilliant victories! He won by destroying the enemy army. Without armies France's enemies couldn't wage war and they were forced to capitulate. By attacking the true center of gravity, Napoleon made all these other things we've been talking about unimportant."

"One certainly can't fault the marvelous ability of Napoleon, and it is not my intention to criticize him. I truly admire his genius. But please consider with me these points: while it is true that Napoleon won a series of important and impressive victories, he also frequently fought the same enemies. He won, the vanquished recognized his great army and his superior generalship, and at the first opportunity or sign of weakness, they challenged him again. This is certainly the case with Prussia, Austria and Russia. Do you think that there might have been a way for Napoleon to achieve his victories, fight fewer wars, and possibly spare the lives of so many of his brave countrymen?"

There were no responses, so Clavis went on. "What if Napoleon had considered centers of gravity during France's

fighting in Spain? Do you think it may have helped resolve that bitter and futile counter guerrilla war? Was marching into Spain with his best marshals the way to arrive at a solution in France's favor? And what of Napoleon's long and eventually disastrous war with England? Napoleon's inability to fight the British navy forced him to attempt to strike at British pocketbooks by coercing other continental powers to stop trading with England. But, his attempt at economic measures was a failure, and he could not bring the English to battle on his terms on land. Nor could he launch his long-dreamt cross-channel invasion. No, the war would be fought on British terms at times and places of their choosing. Ultimately, Napoleon wore down France by repeatedly viewing warfare as a simple clash of armies in decisive battles."

Colonel Bearos sat back in his chair, aware that everyone was watching him for his next parry and thrust. He would not disappoint them. Using his cigar to emphasize his words, he very forcefully said, "Look, Clavis, you are forgetting what soldiers are paid to do--defeat the enemy. Napoleon was a soldier, not a politician. Of course, I'm certain you have a snappy comeback complete with historical references, but I can lay out many examples to support my position. I can show you how plan after plan in the Second World War focused on a major enemy formation. Operation Crusader, for example, was directed at Rommel's Afrika Korps. Would you like to have another specific case?"

Colonel Clavis held up his hands in mock surrender. "Sir, I am not forgetting what soldiers are supposed to do, and I do not argue with the fact that military plans are focused on the enemy. Naturally, the British Eighth Army's intent was to defeat Rommel. Plans are not written to defeat centers of gravity! Attacking them is merely a way to help defeat the enemy! But, when I hear someone identify a major enemy formation as a center of gravity, I always marvel at the notion. You see, if we have the means to accomplish the enemy's destruction relatively easily, then we probably won't concern ourselves with his center of gravity. For example, let's say we have an army of six or seven divisions at our disposal and we have been given the mission of seizing an island held by a force about the size of a brigade. Without doubt, the elimination of that enemy brigade will accomplish our mission. Destroy it and we own the island. Command and control, leaders, resupply, or whatever else that may be important to that brigade are moot issues. Does that mean the brigade is the enemy center of gravity? No matter, we're not too worried about it with those odds, right? Let's change the elements of our equation now. What if we have only a division or even a brigade ourselves? We still must seize the island, and has anything changed in regard to the enemy situation? No, but we are now going to have to be very careful and very clever in our planning. We are going to look for something which will make the enemy defense difficult or impossible. Now, isn't the identification of the enemy brigade as the center of gravity the same as saying the entire Afrika Korps is such? Or calling a

combined arms army a center of gravity in present-day Europe?"

A number of heads were nodding affirmation. Major Speer smiled broadly and said, "I couldn't agree more. I also have been amazed at how cavalierly some people can tag an entire army as a center of gravity, as though they have arrived at some sort of revelation. Destroying such a center of gravity is quite another matter."

"I like your point about the center of gravity becoming more important as the difficulty of defeating the enemy increases," Colonel South joined. "Personally, my debate on this issue is over. I asked myself which approach would serve me best under all circumstances, to include a situation where I was very much the weaker of two opponents."

Colonel Kitting, who had been waiting eagerly for them to finish, immediately launched a supporting attack for the beleaguered Colonel Bearos. "What about Operation Crusader on the Eastern Front? There's a clear case of a commander identifying a particular part of the enemy as the center of gravity."

Kitting was about to expound on his example when Colonel Clavis cut him off. "What do I have to do?" he asked in exasperation. "Look, if you still can't grasp the concept, if you continue to dwell on the undebatable merits of destroying the enemy force, let me say one more thing and then I will speak of this no more! Calling the enemy army the center of gravity is like saying the way to combat crime is to get rid of all the criminals. Yes, that will work; it is absolutely true. It is also absolutely impossible. What about eliminating drug abuse and opportunity for crime, and improving social conditions that breed criminals? While these measures won't stop crime, they certainly will make the war against it easier to wage. So it is in war with centers of gravity."

Colonel Kitting stared silently at the wall. Colonel Bearos cleared his throat and wiped an imaginary speck from his pathfinder badge. Then he said, "Well, it's late and the storm has passed. I'm going to get to bed."

He rose and walked from the room. The others slowly followed.

There was no longer the sound of thunder outside, but the electricity was still off. I paid my tab, retrieved my coat and hat and walked back to my room in a soft, steady rain. From far over the tree-etched eastern horizon, lightning provided an occasional glimpse of the larger puddles, and I was able to wind my way around them. The air smelled of wet grass and earth, refreshing as always, but especially after the pipe and cigar smoke of the lounge. The fog of the strange group's conversation continually pushed forward then ebbed back in my mind as I picked my steps along the quiet street. Maybe I won't do any reading, after all, I thought. The book I had brought was Clausewitz's On War.

BIBLIOGRAPHIC NOTES

Direct reference was made to the following authors or works:

Duffy, Christopher. The Military Life of Frederick the Great. New York: Atheneum, 1986.

On page 14, Colonel Clavis says that without considering centers of gravity, "victory is dependent on the 'lottery of war.'" The quotation is from page 329, above, where Duffy is referring to an anonymous author's work regarding Frederick the Great: "In a Napoleonic vain, Frederick once described the Duke of Bevern as an unlucky commander...but he knew that misfortune could attend any general who ventured his reputation in the lottery of war."

Jomini, Baron Antoine Henri de. The Art of War. Translated by G.H. Mendell and W.P. Craighill. Philadelphia: J.B. Lippincott and Co., 1862. Reprinted, Westport: Greenwood Press Publishers, 1971.

Lawrence, T.E. Seven Pillars of Wisdom. England: Jonathan Cape, 1935. Reprinted, New York: Doubleday and Co., 1986.

On page 20, Colonel South mentions that, according to T.E. Lawrence, "rebels must have the sympathetic support of the population." Of his experiences as an Arab guerrilla leader against the Turks, Lawrence writes, "It seemed to me that our rebellion had an unassailable base....It had a friendly population, of which some two in the hundred were active, and the rest quietly sympathetic to the point of not betraying the movements of the minority." (p.202).

Sun Tzu. The Art of War. Translated and with an introduction by Samuel B. Griffith. New York: Oxford University Press, 1971.

On page 13, Colonel South says that theater commanders should strive to attain the strategic objectives of the nation, and that this may be done without destroying the enemy's armed forces, as he is "sure Sun Tzu would agree." Sun Tzu said that "...in war the best policy is to take a state intact; to destroy it is inferior to this....For to win one hundred battles is not the acme of skill. To subdue the enemy without fighting is the acme of skill....Thus, what is of supreme importance in war is to attack the enemy's strategy." (p.77).

von Clausewitz, Carl. On War. Edited and translated by Michael Howard and Peter Paret. Princeton: Princeton University Press, 1984.

Field Manual 100-5, Operations. Washington, D.C.: Headquarters, Department of the Army, 1986.